Abstract

Methods, computer programs and database systems for performing a join are disclosed. The join includes a right table and a left table. The right table includes a plurality of right table rows. In one instance, each of the plurality of right table rows is grouped into one of a plurality of right table partitions. The left table includes one or more left table rows. It is determined that a partitioning column of the right table is specified in an equality condition of the join. The left table is prepared to join one or more rows of the left table with one or more rows of the right table by selecting one of the plurality of left table rows and generating a partition number for the selected one of the plurality of left table rows. For a left table row for which a partition number was generated, a right table partition with a partition number that matches the generated partition number is identified, and a product join is used to join the one or more right table rows in the matching partition with the selected one of the left table rows if one or more join conditions are satisfied. In another instance, the left and right tables are partitioned, the left table and the right table are joined on equality constraints and a relationship is identified between a partitioning expression associated with the left table and a partitioning expression associated with the right table. It is determined that each left table partition matches at least one right table partition based on the relationship between the partitioning expressions associated with the left table and right table. The one or more left table rows of each matching left table partition are joined with the one or more right table rows of the at least one matching right table partition if one or more join conditions are satisfied. In another instance, the join specifies an equality constraint between each primary index column of the left table and a corresponding primary index column of the right table and inequality conditions between each partitioning column of the left table and a corresponding partitioning column of the right table. A mapping of the plurality of left table partitions to the plurality of right table partitions is determined to be a one to many relationship and at least one left table partition is determined to match at least two right table partitions based on the relationship between the partitioning expressions associated with the left table and right table. The one or more left table rows of the at least one matching left table partition are joined with the one or more right table rows of the at least two matching right table partitions if one or more join conditions are satisfied.